MINOCYCLINE IN EARLY LYME BORRELIOSIS

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ABSTRACT

The present study was performed to assess the efficacy of minocycline in the treatment of early Lyme Borreliosis. 126 patients with erythema migrans were included from June 1993 to April 1995 at the Department of Dermatology in Graz, Austria. The patients were treated with minocycline 100 mg b.i.d. orally for 14 days and clinically reexamined for 15 months on the average (1 - 30 months). Moreover, a punch biopsy from the erythema migrans lesion was taken in 78/126 patients to perform *Borrelia burgdorferi*-specific PCR analysis before treatment. A second punch biopsy adjacent to the first biopsy site was able to be obtained in 41/78 patients at the end of therapy. *Borrelia burgdorferi*-specific PCR yielded positive results in 71% of the patients before therapy. After minocycline treatment, *Borrelia burgdorferi*-specific gene segments were no longer detectable in any of the skin biopsy samples. The good clinical response in conjunction with the PCR data presented indicate the efficacy of minocycline for the treatment of early Lyme Borreliosis. Minocycline is the first antibiotic to be assessed on the molecular level in this indication.

KEY WORDS

erythema migrans, Borrelia burgdorferi, antibiotic therapy, minocycline, polymerase chain reaction (PCR)

INTRODUCTION

Various antibiotics have been shown to be effective in the treatment of erythema migrans (EM), the typical cutaneous manifestation of early Lyme Borreliosis (LB). Tetracyclines (1-14), beta-lactams (1-3,5-8,10-12,14-17) and macrolide antibiotics (1,2,4, 5,8,12,17) have been applied. However, none of the hitherto used antibiotics is considered universally effective and, till now, the optimal antimicrobial regimen has not been established. Minocycline, a second generation tetracycline with superior properties suitable for LB treatment, was first employed in EM patients by Weber et al. (18), but has not yet been examined in a series consisting of many patients. In a recent study on 14 EM patients from the Department of Dermatology in Graz, Austria, the efficacy of minocycline (100 mg b.i.d. orally for 14 days) was assessed by clinical and molecular parameters (19). In none of these 14 patients *Borrelia burgdorferi* (*Bb*)-specific DNA could be found in skin biopsy specimens after treatment in comparison to a positivity rate of 57% before therapy. The PCR results were in accordance with the good clinical outcome of the